

REMARKS

Applicant would like to thank the Examiner for the careful consideration given the present application. The application has been carefully reviewed in light of the Office action, and amended as necessary to more clearly and particularly describe the subject matter which applicant regards as the invention.

Claims 1-22 remain in this application.

Claims 1 and 2 are objected to because the Examiner questions the clarity of the "coding/tumbler pin row" feature. Applicant has amended claim 1, replacing "coding/tumbler pin row" with simply "coding pin row". The "coding pin row" represents a feature upon the key as opposed to the cylinder. Applicant has amended claim 2 and claim 13 in a similar manner. Reconsideration and withdrawal of the formal objection is requested.

Claims 1-8 and 10-18 stand rejected under 35 USC 102 as being anticipated by U.S. patent 5,438,857 to Kleinhaeny (hereinafter Kleinhaeny '857). Applicant has amended independent claims 1 and 13. For the following reasons, the Examiner's rejection is traversed.

The present invention is directed to a security-reversible key and cylinder. The key includes various security elements that interact with tumbler pins upon the cylinder. Specifically, the key includes a blocking groove in a coding pin row. The blocking groove has a coded blocking depth. The blocking groove is configured such that a blocking counter pin impinges on the cylinder housing if the blocking groove is not deep enough such that complete insertion of a key with an insufficiently deep blocking groove is blocked by a pair of blocking tumbler pins.

The Examiner states that Kleinhaeny '857 discloses a reversible key with at least three tumbler pin rows and at least three coding pin rows and an assigned cylinder with tumbler pin rows having tumbler pin pairs consisting of tumbler pins and counter pins at the positions of the tumbler pin rows. The Examiner states that the key has a blocking groove that has a coded blocking depth and in the assigned cylinder, at least at a rear most coding position, a pair of blocking tumbler pins corresponding to the blocking groove with a blocking tumbler pin and a blocking counter pin are received.

Kleinhaeny '857 teaches a lock cylinder and key, the key including copying or forging protection by means of a technical measure in the cylinder and on the blank. Within the cylinder, at least one tumbler pin functions as a control pin that by means of a zone can perform a side coding in addition to a depth coding. Depressions for control pins may be placed in both the wide side and narrow side of the key.

Numerous features of the invention as defined in amended claim 1 are not disclosed by Kleinhaeny '857 and as a result the invention is not anticipated by this reference. Specifically, the claimed blocking groove of a security reversible-key is not taught by Kleinhaeny '857. The claimed blocking groove requires "a coded blocking depth (B1, B2, B3) and, in the assigned cylinder at least at a rearmost coding position (P1'), a pair of blocking tumbler pins corresponding to the blocking groove (BN) with a blocking tumbler pin (BZ) and an extended blocking counter pin (BG)." In this regard it is noted that the control faces (SF, SFN, SFx) of Kleinhaeny are not blocking grooves, as defined in claims 1 and 13. Rather, these control faces have entirely different functions and different shapes.

Further, claim 1 requires "a total length (lb) of the blocking tumbler pin (BZ)

and the blocking counter pin (BG) is almost equal to a distance (db) from the blocking groove (BN) to a cylinder housing (10)." In this regard it is noted that Kleinhaeny '857 does not teach or suggest pairs of blocking tumbler pins (e.g. BZ + BG) with extended blocking counter pins and a total length corresponding to the distance from the blocking groove to the cylinder housing, as required. Kleinhaeny '857 discloses a control pin K in combination with a counter pin (see figure 3), but does not teach this combination as providing a block function or as having a combined length almost equal to a distance from the cylinder housing to any groove. This is understandable because Kleinhaeny '857 does not utilize the cylinder housing at all for impingement of key entry into the cylinder. The cylinder housing has no special function in Kleinhaeny '857 and is not shown in the Figures (the reference number 2 in Figure 6 is a stator of the cylinder and not a cylinder housing as stated by the Examiner).

Kleinhaeny '857 teaches using a control pin which impinges on the key, if the key has no corresponding control face which can move the control pin out of the way, to prevent insertion of an improper key. Figure 10 of Kleinhaeny '857 shows how control pin KS would impinge on the tip of a key without a corresponding correct control face KF, which can lift the control pin KS out of the way. The rising control face KF is disposed only at the tip of the key and is inclined, whereas applicant's blocking groove BN only runs parallel to the axis x of the key. The control face KF and a corresponding control pin KS with a special shaping reach below the central bisecting plane, which is not the case for normal coding pins. The normal lead-in face or beveled tip of a key is not part of the blocking groove. Consequently, the functions are entirely different; the control pin prevents insertion at the key, if there is

no correct control face KF – whereas the blocking code controls the entry through a parallel blocking groove BN with a coded blocking depth and a pair of blocking tumbler pins BZ, BG impinging on the cylinder housing.

Kleinhaeny '857 also discloses control pins which prevent turning of the cylinder rotor if the control pin and counter pins if in the shear line SL. The Examiner states that Figures 16 and 16C refer to a "blocking groove" SFN with a "coded blocking depth." Applicant respectfully disagrees. SFN is a side wall of a slot SF/SFN of width n where the side wall SFN is controlled by a corresponding control pin. The slot is not controlled by a blocking pin. Kleinhaeny '857 refers to control pins and counter pins (such as a counter pin 4 in Fig. 6) which will lock when they are not in the shear line SL. However, all control pins and normal counter pins in Kleinhaeny '857 are only corresponding to the shear line SL – and nowhere is there an extended blocking counter pin which acts with a cylinder housing, as required.

Additionally, Kleinhaeny '857 does not teach or suggest a multifunctional pair of blocking tumbler pins BG and BZ wherein in addition to providing a blocking function, the blocking counter pin BG "is also utilized as a coding tumbler pin with coding steps (C1, C2, C3, C4) for turning of the cylinder" as required by claim 1. Kleinhaeny '857 teaches only single function tumbler pins. For the foregoing reasons, reconsideration and withdrawal of the rejection of claim 1, and claims 2-8 and 10-12 that depend therefrom is requested.

With particular reference to claim 11, Kleinhaeny '857 does not teach the control pin (KS) which prevents insertion of a key without a rising control face disposed only at the tip of the key, as being a flat pin (23), as required by claim 11.

Kleinhaeny '857 only discloses a stepped pin at this position. For this additional reason, claim 11 is independently patentable over Kleinhaeny '857.

Claim 13 is a locking system that includes some features identical to those claimed in claim 1 and not taught by Kleinhaeny '857. Specifically, a pair of blocking tumbler pins corresponding to the blocking groove (BN) with a blocking tumbler pin (BZ) and an extended blocking counter pin (BG)" wherein "a total length (lb) of the blocking tumbler pin (BZ) and the blocking counter pin (BG) is almost equal to a distance (db) from the blocking groove (BN) to a cylinder housing (10)" as required by claim 13 is not taught. As previously stated with respect to claim 1, Kleinhaeny '857 discloses a control pin K in combination with a counter pin, but does not teach this combination as providing a block function or as having a combined length almost equal to a distance from the cylinder housing to any groove. As previously mentioned Kleinhaeny '857 does not utilize the cylinder housing at all for impingement of key entry into the cylinder; the cylinder housing has no special function in Kleinhaeny '857 and is not shown in the Figures.

And again, Kleinhaeny '857 does not teach or suggest a multifunctional pair of blocking tumbler pins BG and BZ wherein, in addition to providing a blocking function, the blocking counter pin BG "is also utilized as a coding tumbler pin with coding steps (C1, C2, C3, C4) for turning of the cylinder" as required by claim 13. Reconsideration and withdrawal of the rejection of claim 13 and claims 14-18 that depend therefrom is respectfully requested.

With particular reference to claim 14, Kleinhaeny '857 does not teach the control pin (KS), which prevents insertion of a key without a rising control face disposed only at the tip of the key, as being a flat pin (23), as required by claim 14.

Kleinhaeny '857 only discloses a stepped pin at this position. For this additional reason, claim 14 is independently patentable over Kleinhaeny '857.

Claim 9 stands rejected under 35 USC 103(a) as being unpatentable over Kleinhaeny '857. The Examiner states that Kleinhaeny '857 discloses that there may be more than one row of tumbler pins, but not with each row of tumbler pins each having a blocking groove with assigned pair of blocking tumbler pins, however that increasing the number of blocking grooves is merely a matter of design choice. Applicant reiterates that Kleinhaeny '857 does not teach blocking tumbler pins with the specific features previously described with respect to claim 1 (specific length and multi-function), from which claim 9 depends. These features are not mere design choice variations of what is taught by Kleinhaeny '857. Therefore withdrawal of the rejection of claim 9 is requested.

Claims 19-22 stand rejected under 35 USC 103(a) as being unpatentable over Kleinhaeny '857 in view of U.S. Patent 6,378,739 to Maas et al. (hereinafter Maas '739). For the following reasons, the Examiner's rejections are traversed.

Maas '739 teaches a precompression system for a liquid dispenser that prevents liquid from being discharged from the dispenser until a predetermined pressure level has been attained within the dispenser. Maas '739 discloses forming a preform container component of the system in one location and then shipping it to a liquid filling and assembly point before it is blow molded into a larger container. As a result, the cost of transporting and storing the container before final assembly is substantially reduced.

There is no motivation or suggestion in the cited art of record to combine the references in the manner proposed by the Examiner. These references are directed

toward solving different problems. Put more specifically, the Maas '739 reference would not be included within the field of endeavor of one of ordinary skill in the art of manufacturing locks and keys. Lock and key manufacture does not include blow molding at any stage and is not concerned with shipping costs associated with bulky blow molded articles. Distributed manufacture of lock and key systems is instead concerned with the location of expensive precision machining equipment needed for certain operations and common machining equipment that can be used for other operations in manufacture. Because the teachings within Maas '739 are outside of the scope of one of ordinary skill in the art of lock and key manufacture, the combination of the teachings of these references is improper. Reconsideration and withdrawal of the rejection of claims 19-22 is requested.

In light of the foregoing, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in a condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 18-0160, our Order No. FRR-12782.

Respectfully submitted,

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